FIG.1

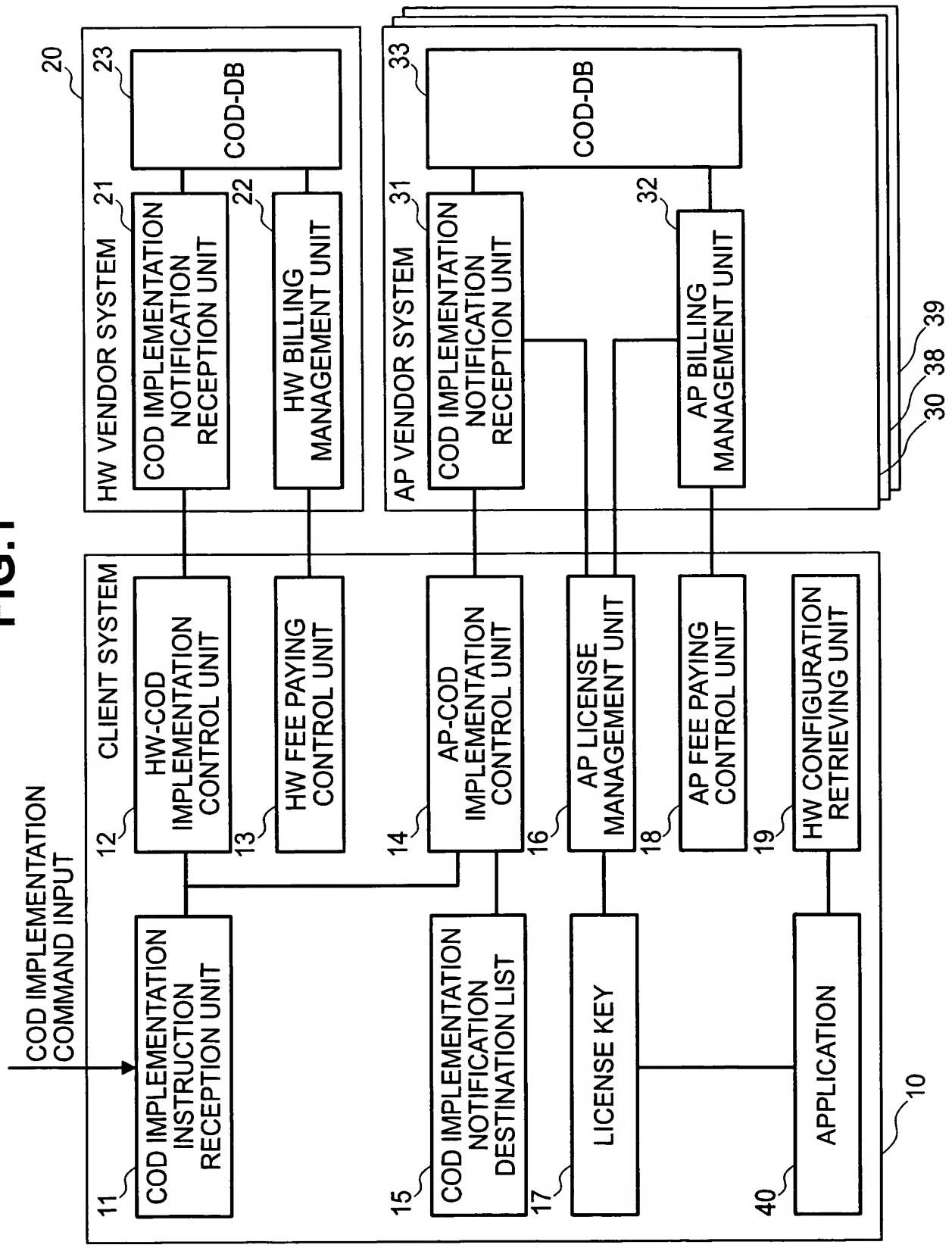

COD IMPLEMENTATION COMMAND INPUT
CLIENT SYSTEM
10
COD IMPLEMENTATION INSTRUCTION RECEPTION UNIT
11
HW-COD IMPLEMENTATION CONTROL UNIT
12
HW FEE PAYING CONTROL UNIT
13
COD IMPLEMENTATION NOTIFICATION DESTINATION LIST
15
AP-COD IMPLEMENTATION CONTROL UNIT
14
LICENSE KEY
17
AP LICENSE MANAGEMENT UNIT
16
AP FEE PAYING CONTROL UNIT
18
APPLICATION
40
HW CONFIGURATION RETRIEVING UNIT
19
HW VENDOR SYSTEM
20
COD IMPLEMENTATION NOTIFICATION RECEPTION UNIT
21
HW BILLING MANAGEMENT UNIT
22
COD-DB
23
AP VENDOR SYSTEM
30
COD IMPLEMENTATION NOTIFICATION RECEPTION UNIT
31
AP BILLING MANAGEMENT UNIT
32
COD-DB
33
39
38

FIG.2

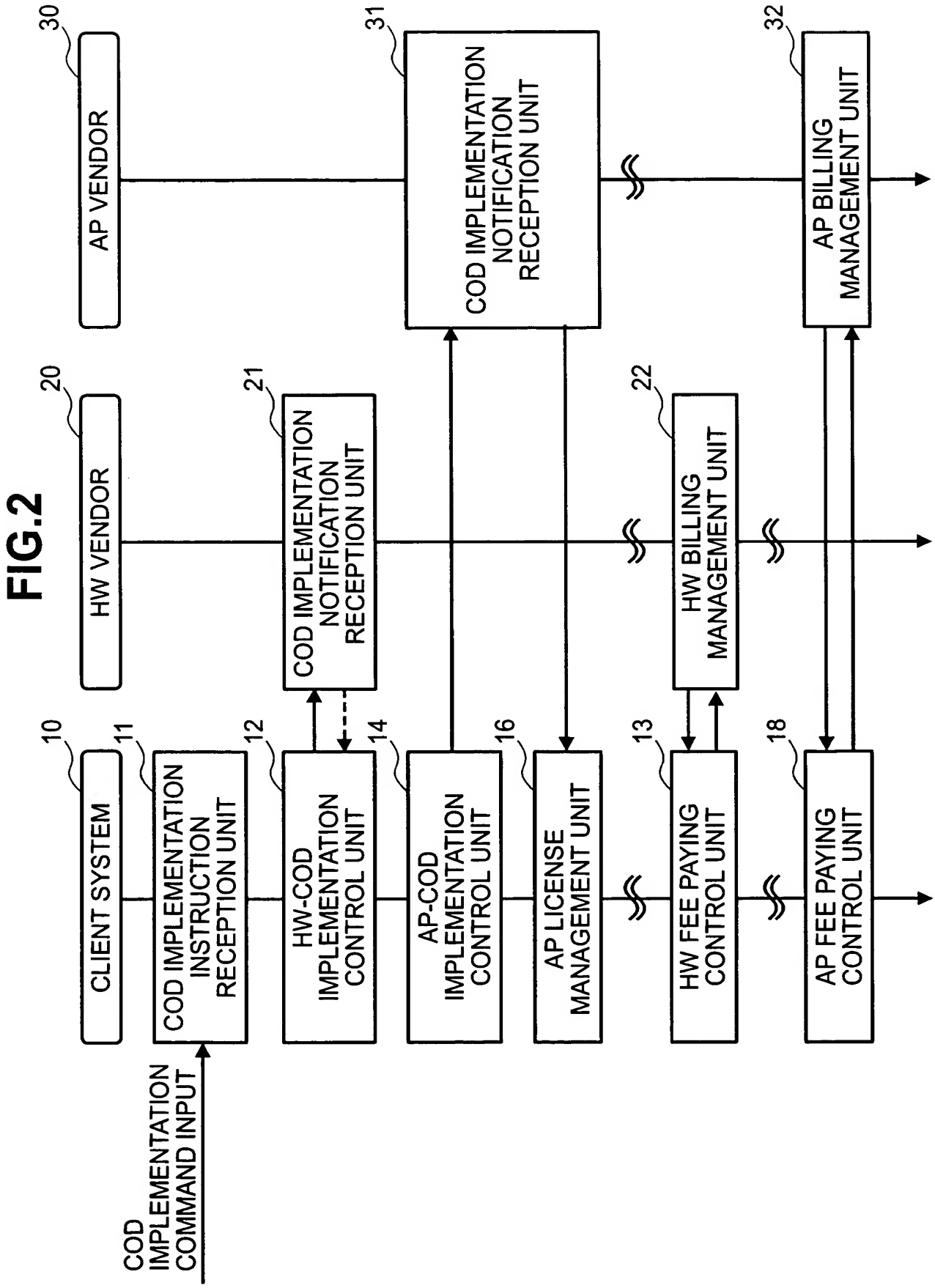

30
AP VENDOR
31
COD IMPLEMENTATION NOTIFICATION RECEPTION UNIT
32
AP BILLING MANAGEMENT UNIT
20
HW VENDOR
21
COD IMPLEMENTATION NOTIFICATION RECEPTION UNIT
22
HW BILLING MANAGEMENT UNIT
10
CLIENT SYSTEM
11
COD IMPLEMENTATION INSTRUCTION RECEPTION UNIT
12
HW-COD IMPLEMENTATION CONTROL UNIT
14
AP-COD IMPLEMENTATION CONTROL UNIT
16
AP LICENSE MANAGEMENT UNIT
13
HW FEE PAYING CONTROL UNIT
18
AP FEE PAYING CONTROL UNIT
COD IMPLEMENTATION COMMAND INPUT

FIG.3

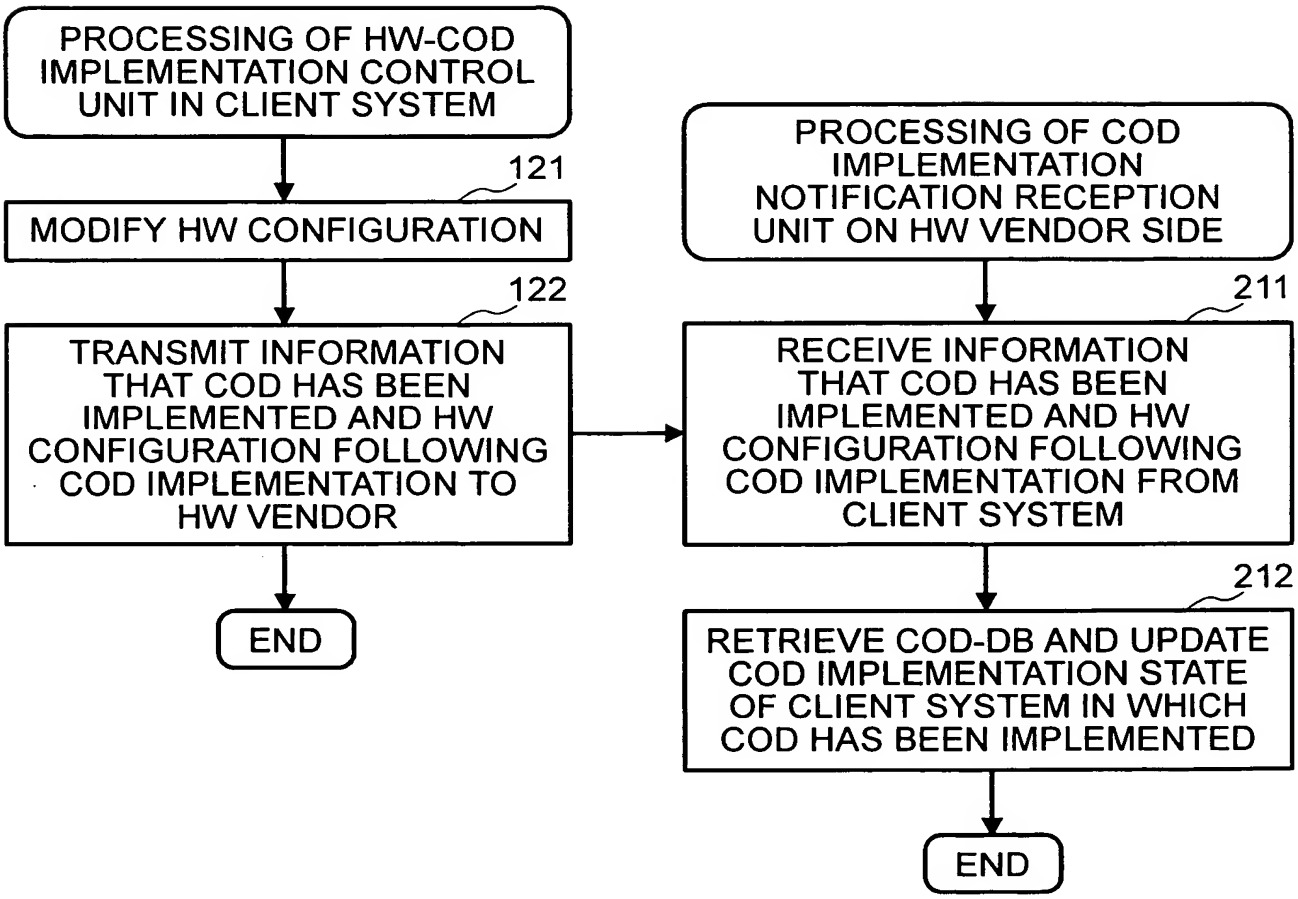

PROCESSING OF HW-COD IMPLEMENTATION CONTROL UNIT IN CLIENT SYSTEM
121
MODIFY HW CONFIGURATION
122
TRANSMIT INFORMATION THAT COD HAS BEEN IMPLEMENTED AND HW CONFIGURATION FOLLOWING COD IMPLEMENTATION TO HW VENDOR
END
PROCESSING OF COD IMPLEMENTATION NOTIFICATION RECEPTION UNIT ON HW VENDOR SIDE
211
RECEIVE INFORMATION THAT COD HAS BEEN IMPLEMENTED AND HW CONFIGURATION FOLLOWING COD IMPLEMENTATION FROM CLIENT SYSTEM
212
RETRIEVE COD-DB AND UPDATE COD IMPLEMENTATION STATE OF CLIENT SYSTEM IN WHICH COD HAS BEEN IMPLEMENTED
END

FIG.4

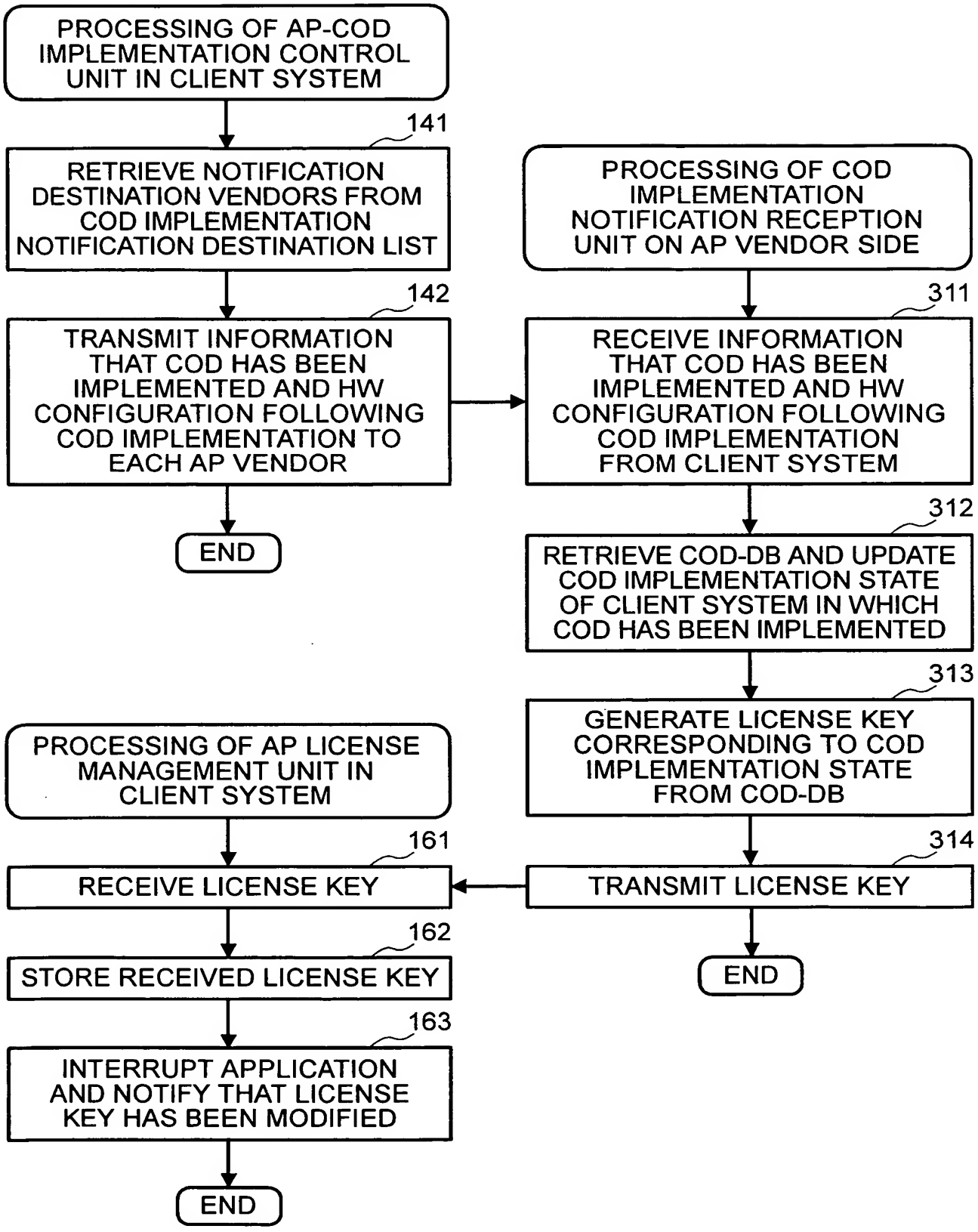

PROCESSING OF AP-COD IMPLEMENTATION CONTROL UNIT IN CLIENT SYSTEM
141
RETRIEVE NOTIFICATION DESTINATION VENDORS FROM COD IMPLEMENTATION NOTIFICATION DESTINATION LIST
142
TRANSMIT INFORMATION THAT COD HAS BEEN IMPLEMENTED AND HW CONFIGURATION FOLLOWING COD IMPLEMENTATION TO EACH AP VENDOR
END
PROCESSING OF COD IMPLEMENTATION NOTIFICATION RECEPTION UNIT ON AP VENDOR SIDE
311
RECEIVE INFORMATION THAT COD HAS BEEN IMPLEMENTED AND HW CONFIGURATION FOLLOWING COD IMPLEMENTATION FROM CLIENT SYSTEM
312
RETRIEVE COD-DB AND UPDATE COD IMPLEMENTATION STATE OF CLIENT SYSTEM IN WHICH COD HAS BEEN IMPLEMENTED
313
GENERATE LICENSE KEY CORRESPONDING TO COD IMPLEMENTATION STATE FROM COD-DB
314
TRANSMIT LICENSE KEY
END
PROCESSING OF AP LICENSE MANAGEMENT UNIT IN CLIENT SYSTEM
161
RECEIVE LICENSE KEY
162
STORE RECEIVED LICENSE KEY
163
INTERRUPT APPLICATION AND NOTIFY THAT LICENSE KEY HAS BEEN MODIFIED
END

FIG.5

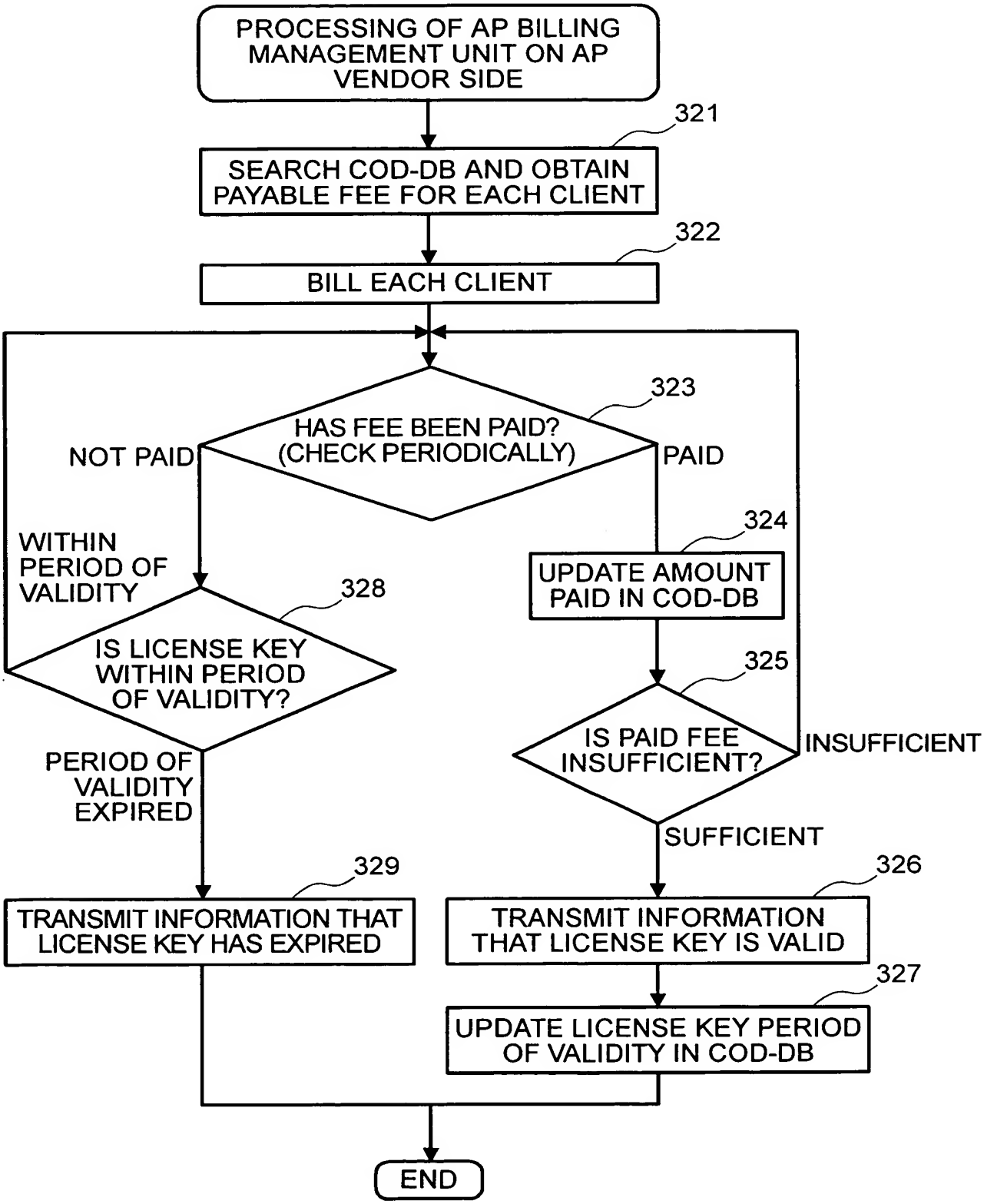

PROCESSING OF AP BILLING MANAGEMENT UNIT ON AP VENDOR SIDE
321
SEARCH COD-DB AND OBTAIN PAYABLE FEE FOR EACH CLIENT
322
BILL EACH CLIENT
323
HAS FEE BEEN PAID? (CHECK PERIODICALLY)
NOT PAID
PAID
WITHIN PERIOD OF VALIDITY
328
IS LICENSE KEY WITHIN PERIOD OF VALIDITY?
PERIOD OF VALIDITY EXPIRED
329
TRANSMIT INFORMATION THAT LICENSE KEY HAS EXPIRED
324
UPDATE AMOUNT PAID IN COD-DB
325
IS PAID FEE INSUFFICIENT?
INSUFFICIENT
SUFFICIENT
326
TRANSMIT INFORMATION THAT LICENSE KEY IS VALID
327
UPDATE LICENSE KEY PERIOD OF VALIDITY IN COD-DB
END

FIG.6

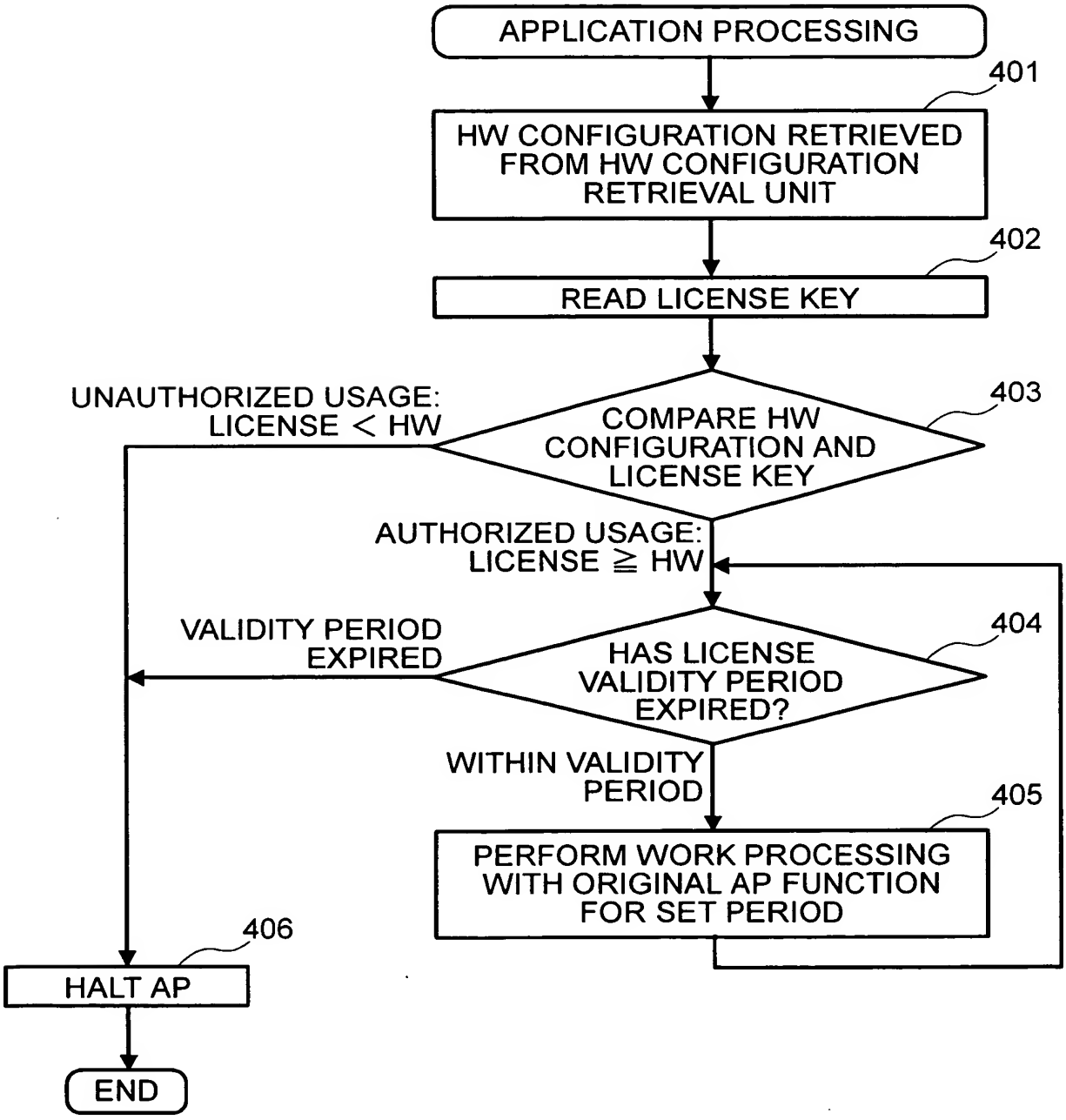
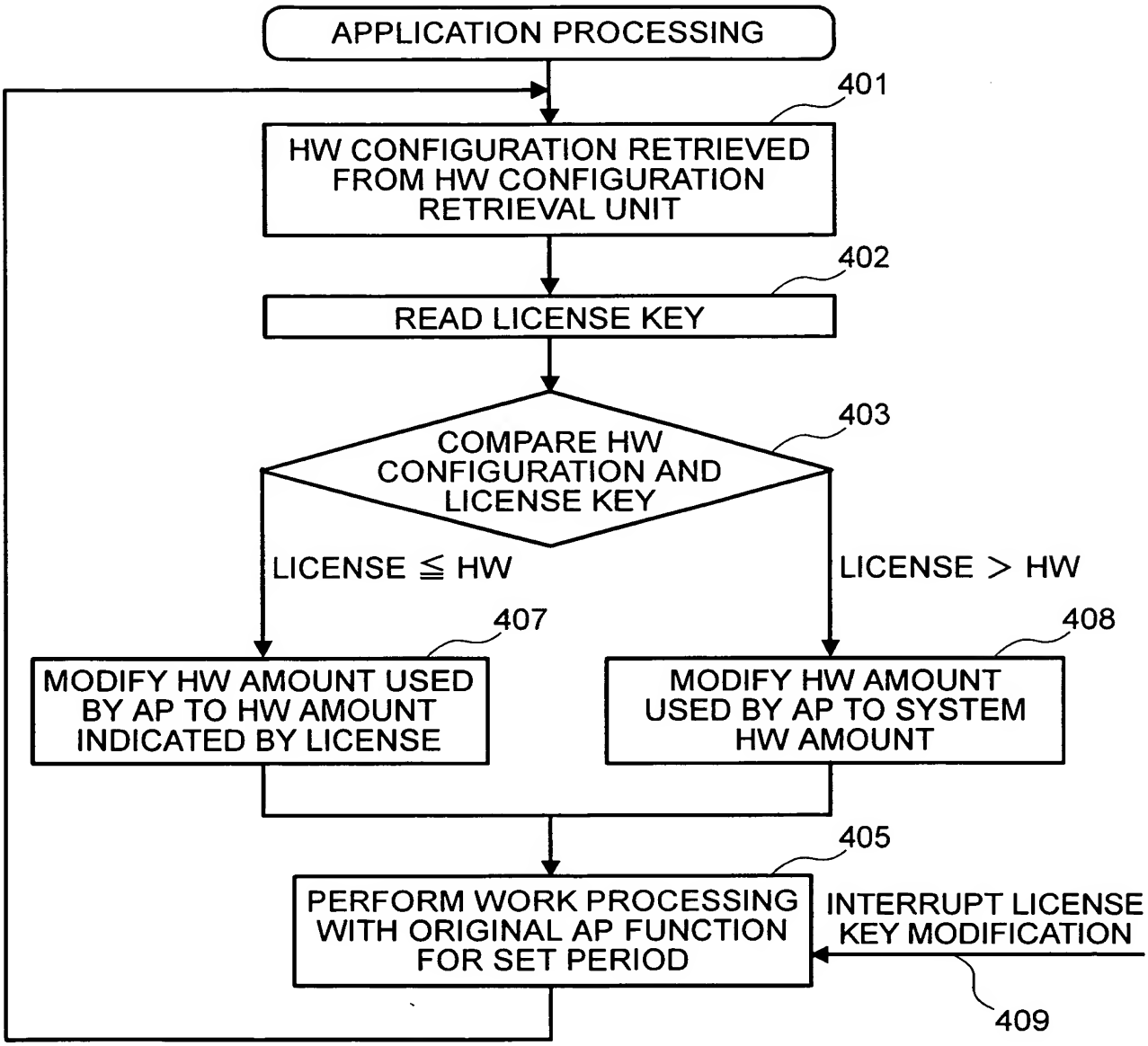

APPLICATION PROCESSING
401
HW CONFIGURATION RETRIEVED FROM HW CONFIGURATION RETRIEVAL UNIT
402
READ LICENSE KEY
UNAUTHORIZED USAGE: LICENSE < HW
403
COMPARE HW CONFIGURATION AND LICENSE KEY
AUTHORIZED USAGE: LICENSE ≧ HW
VALIDITY PERIOD EXPIRED
404
HAS LICENSE VALIDITY PERIOD EXPIRED?
WITHIN VALIDITY PERIOD
405
PERFORM WORK PROCESSING WITH ORIGINAL AP FUNCTION FOR SET PERIOD
406
HALT AP
END

FIG.7


APPLICATION PROCESSING
401
HW CONFIGURATION RETRIEVED FROM HW CONFIGURATION RETRIEVAL UNIT
402
READ LICENSE KEY
403
COMPARE HW CONFIGURATION AND LICENSE KEY
LICENSE ≦ HW
LICENSE > HW
407
MODIFY HW AMOUNT USED BY AP TO HW AMOUNT INDICATED BY LICENSE
408
MODIFY HW AMOUNT USED BY AP TO SYSTEM HW AMOUNT
405
PERFORM WORK PROCESSING WITH ORIGINAL AP FUNCTION FOR SET PERIOD
INTERRUPT LICENSE KEY MODIFICATION
409

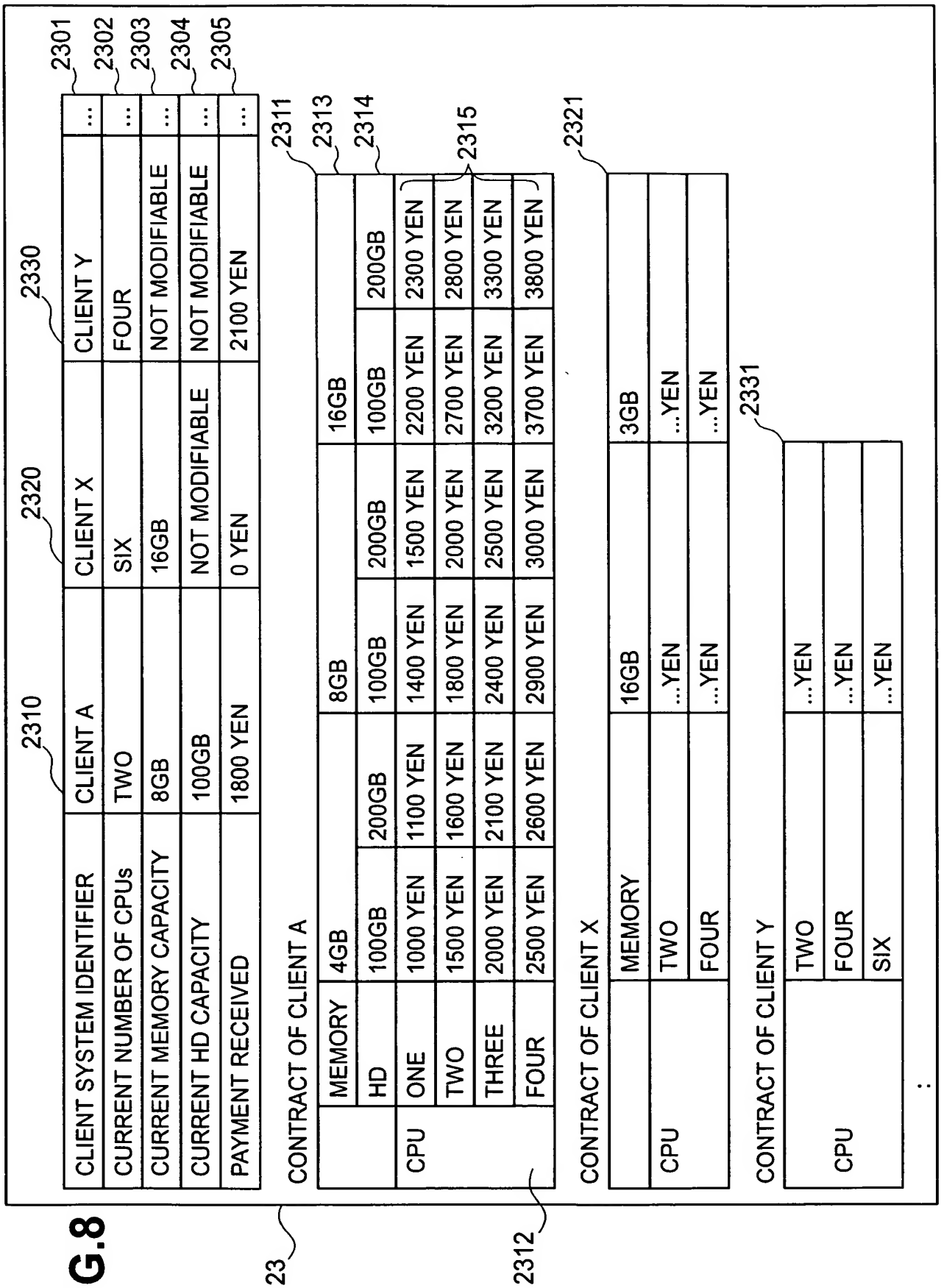
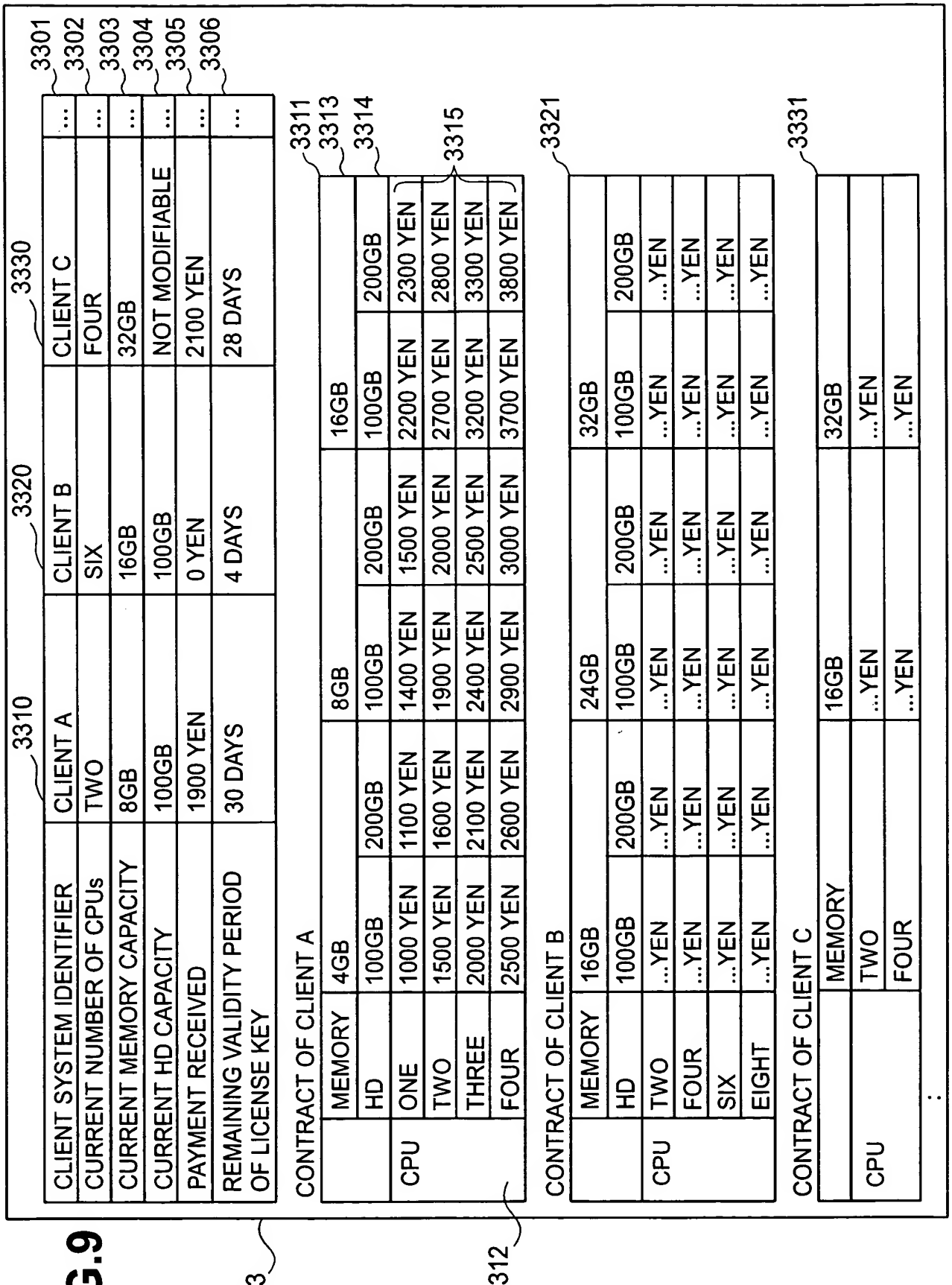

2310
2320
2330
2301
2302
2303
2304
2305
CLIENT SYSTEM IDENTIFIER
CLIENT A
CLIENT X
CLIENT Y
...
CURRENT NUMBER OF CPUs
TWO
SIX
FOUR
...
CURRENT MEMORY CAPACITY
8GB
16GB
NOT MODIFIABLE
...
CURRENT HD CAPACITY
100GB
NOT MODIFIABLE
NOT MODIFIABLE
...
PAYMENT RECEIVED
1800 YEN
0 YEN
2100 YEN
...
2311
2313
2314
2315
CONTRACT OF CLIENT A
MEMORY
4GB
8GB
16GB
HD
100GB
200GB
100GB
200GB
CPU
ONE
1000 YEN
1100 YEN
1400 YEN
1500 YEN
2200 YEN
2300 YEN
TWO
1500 YEN
1600 YEN
1800 YEN
2000 YEN
2700 YEN
2800 YEN
THREE
2000 YEN
2100 YEN
2400 YEN
2500 YEN
3200 YEN
3300 YEN
FOUR
2500 YEN
2600 YEN
2900 YEN
3000 YEN
3700 YEN
3800 YEN
2321
CONTRACT OF CLIENT X
MEMORY
16GB
3GB
CPU
TWO
...YEN
...YEN
FOUR
...YEN
...YEN
2331
CONTRACT OF CLIENT Y
CPU
TWO
...YEN
FOUR
...YEN
SIX
...YEN
23
2312

FIG.8

FIG.9


33
3310
3320
3330
3301
3302
3303
3304
3305
3306
CLIENT SYSTEM IDENTIFIER
CURRENT NUMBER OF CPUs
CURRENT MEMORY CAPACITY
CURRENT HD CAPACITY
PAYMENT RECEIVED
REMAINING VALIDITY PERIOD OF LICENSE KEY
CLIENT A
TWO
8GB
100GB
1900 YEN
30 DAYS
CLIENT B
SIX
16GB
100GB
0 YEN
4 DAYS
CLIENT C
FOUR
32GB
NOT MODIFIABLE
2100 YEN
28 DAYS
CONTRACT OF CLIENT A
3311
3312
3313
3314
3315
CONTRACT OF CLIENT B
3321
CONTRACT OF CLIENT C
3331